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EXAMINER
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LEE, CHEUKFAN

ART UNIT	PAPER NUMBER
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2622

DATE MAILED: 01/05/2004

8

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/444,869

Applicant(s)

Examiner

Chenfan Lee

Group Art Unit

2622

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

## Status

- ☒ Responsive to communication(s) filed on 9-29-03
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1, 3-14, and 16-18 is/are pending in the application.  
Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☒ Claim(s) 4, 9, 10, 14, and 16-18 is/are allowed.
- ☒ Claim(s) 1, 3, 5-7, and 13 is/are rejected.
- ☒ Claim(s) 8, 11, and 12 is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
  - ☒ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been received.
  - ☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_
  - ☐ received in this national stage application from the International Bureau (PCT Rule 1.7.2(a)).

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other \_\_\_\_\_

Office Action Summary

Art Unit: 2622

1. Claims 1, 3-14 and 16-18 are pending. Claims 1, 4, 5, 7, 9, 10, 13, 14, and 18 are independent.
2. The indicated allowableness of claims 1, 3, 5-8, and 11-13 is withdrawn in view of the newly discovered reference(s) to Hiramatsu et al. (U.S. Patent No. 4,974,068) and Matsumoto et al. (U.S. Patent No. 5,514,934). Rejections based on the newly cited reference(s) follow.
3. Claim 11 is objected to because of the following:  
  
In claim 11, the last two words, "visible light" should read -- invisible light --.
4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:  
  
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
5. Claims 1, 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu et al. (U.S. Patent No. 4,974,068).

Regarding claims 1 and 13, Hiramatsu et al. discloses an image reading device that irradiates an object (film) with a light and reads transmitted light from the object (film). The device comprises a single light source (lamp 1) which emits a visible light (red, green and blue

Art Unit: 2622

lights R, G and B) and an invisible light (IR), a reading unit that reads the transmitted light from the object (film), a controller selectively controls to insert one of the visible light filters (35c, 35d, 35e) and IR filter (1-1) (col. 3, line 13 - col. 4, line 66, col. 5, line 1 - col. 7, line 65). The filters are mounted on filter exchange mechanism (4). In a mode when the IR filter is selected and inserted into optical path, the image sensor reads the IR light transmitted from the object and through the IR filter for dust detection. In a mode when the R, G or B filter is selectively inserted into the optical path, the image sensor reads visible light transmitted through the original object (note Fig. 6, col. 4, lines 46-58).

Hiramatsu et al. differs from the invention in that the light being read by the image reading unit is light transmitted from the object (film) and not light reflected from the object. However, one of ordinary skill in the art would have realized that the difference between a reading device which produces a reflected light and a reading device which produces transmitted light is the position of the light source with respect to the original document being scanned or read. To produce a reflected light reflected from a reflective type original, the light source is disposed at the same side of the document where the reading sensor is disposed. To produce a transmitted light transmitted through the original, the light source is disposed at a different side of the original opposite the side of the original at which the reading sensor is disposed. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the reading device of Hiramatsu et al. by repositioning the light source (1) to

Art Unit: 2622

the same side of the original where the image sensor is positioned in order to provide an image reading device for reading a reflective type original.

Regarding claim 3, it is inherent that the IR light has at least one emission peak. As to the range within which the peak occurs, Hiramatsu et al. does not disclose a specific range as claimed, which is between 800 nm to 1000 nm. However, it would have been an obvious design choice of wavelength range for the peak to occur within depending on the type of light source being employed.

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu et al. (U.S. Patent No. 4,974,068) in view of Matsumoto et al. (U.S. Patent No. 5,514,934).

Claim 5 recites limitations similar to those of claim 1 (please refer to discussion for claim 1), except that claim 5 claims a rare gas fluorescent lamp. Hiramatsu et al. discussed for claim 1 above does not disclose the type of lamp (1) as a rare gas fluorescent lamp. However, such lamp for high light-output level and stable discharge is taught by Matsumoto et al. (Figs. 1 and 2, col. 5, line 45 - col. 7, line 5 and lines 28-47). The rare gas fluorescent lamp is used in a fax machine or copier which has an image reading device (col. 6, lines 2-5, col. 1, lines 18-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a rare gas fluorescent lamp as the lamp (1) of Hiramatsu et al., as taught by Matsumoto et al., for a high level light output and stable discharge.

Regarding claim 6, see discussion of xenon as the rare gas (col. 5, lines 49-67).

Art Unit: 2622

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramatsu et al. (U.S. Patent No. 4,974,068) in view of Taguchi (Japanese Patent No. 407272672A or 07-272672). See English translation by machine, a copy of which is attached to the letter of this Office action.

Claim 7 recites limitations similar to those of claim 1, except that claim 7 claims that the fluorescent lamp comprises a sealed container inside which a phosphor brought into emission by a discharge is disposed, a pair of internal electrodes disposed inside the sealed container, and a pair external electrodes disposed outside thereof. Hiramatsu et al. discussed for claim 1 above does not disclose the type of lamp (1) as claimed. However, such a fluorescent lamp with enhanced light emitting efficiency is taught by Taguchi. The fluorescent lamp has a sealed contained (tube 1), a pair of internal electrodes (2a, 2b) and a pair of external electrodes (5a, 5b) disposed outside the sealed contained (tube 1). See Figs. 1 and 3. The figures show two different voltages, one applied between the pair of external electrodes (5a, 5b) producing a discharge between the electrodes (5a, 5b), another one applied between internal electrodes (2a, 2b) producing a discharge between the electrodes (2a, 2b) different from the discharge between the electrodes (5a, 5b).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Hiramatsu et al. with the teaching of the fluorescent lamp of Taguchi, in order to enhance the light emitting efficiency as suggested by Taguchi.

Art Unit: 2622

8. Claims 4, <sup>9,</sup> 10, 14, and 16-18 are allowed.  
c. 2

9. Claim 11 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and to overcome the objection set forth in this Office action.

10. Claims 8, <sup>9,</sup> and 12 are objected to as being dependent upon a rejected base claim, but  
c. 2 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is an examiner's statement of reasons for allowance:

Claim 4 is allowed because Hiramatsu et al. does not disclose switching the emission mode by changing an internal discharge state of the lamp (1) as claimed but by selectively inserting an IR filter in the optical path.

Claims 8 and 9 would be/is allowable because, although the closest prior art Taguchi teaches producing different discharges at electrode pairs by adjusting the voltage or current to the electrode pairs, nowhere in Taguchi suggests that the different discharges produced correspond to two different emission modes (first and second modes claimed), one of which uses IR, and the other of which uses visible light.

Art Unit: 2622

Claim 10 is allowable over the prior art of record because none of the prior art teaches an IR cutoff filter, a visible light cutoff filter, and a filter switching part for selectively locating either filter in either the first mode for reading that uses visible light or the second mode for reading that uses invisible light.

Claim 11 would be allowable because none of the prior art of record teaches calculating a first read result and a second read result and generating a first corrected read result and a second corrected read result relating to the visible light and the invisible light, respectively.

Claim 12 would be allowable because none of the prior art of record teaches a reading unit carriage that moves in two opposite direction in reading in the first mode that uses visible light and in reading in the second that uses invisible light, respectively.

Claim 14 is allowable over the prior art of record because the prior art, including Taguchi (Japanese), does not teach supplying the lamp with power so as to generate two discharges synchronously with each other, one discharge being between the external electrodes of the lamp, and the other being between the internal electrodes.

Claims 18, 16 and 17 are allowable over the prior art of record. Though the closest prior art Taguchi discloses generating different discharges from different pairs of electrodes, i.e., the external pair and the internal pair, Taguchi does not teach generating more infrared (IR) light more in a discharge between one of these pairs of electrodes than a discharge between the other pair of electrodes as claimed in claim 18. Claims 16 and 17 depend upon claim 18.



Art Unit: 2622

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheukfan Lee at telephone number (703) 305-4867.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist at telephone number (703) 305-3900.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, DC 20231

or faxed to:

(703) 872-9314 (for formal communications intended for entry)  
(703) 308-5397 (for informal or draft communications, such as proposed amendments to be discussed at an interview; please label such communications "PROPOSED" or "DRAFT")

or hand-carried to:

Crystal Park Two  
2121 Crystal Drive  
Arlington, VA  
Sixth Floor (Receptionist)

C. L.  
Dec. 27, 2002

A handwritten signature in cursive script, appearing to read "Cheukfan Lee". The signature is written in dark ink and is located in the bottom right corner of the page.